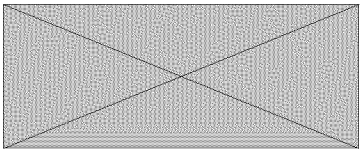

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**Fog Lake**Prospect, Inactive
Record **IL030** - **[View this location using Google Earth]**

| **Commodities and mineralogy** | |
|---|---|
| **Main commodities** | Au; Cu |
| **Other commodities** | Ag; Zn |
| **Ore minerals** | Azurite; chalcopyrite; gold; malachite; pyrite; sphalerite |
| **Gangue minerals** | Calcite; quartz |
| Geographic location of the site | |
| **Quadrangle map, 1:250,000-scale** | IL |
| **Quadrangle map, 1:63,360-scale** | C-4 |
| **Latitude** | 59.5116 |
| **Longitude** | 154.3639 |
| **Location and accuracy** | This record represents an approximately 4,000-foot-long mineralized area along locally-named Fog Creek, a northwest-flowing tributary of Fog Lake (Fog Pond on some older maps). The site is in the approximate center of the area, in the NE1/4 SW1/4 sec. 3, T. 8 S., R. 30 W., Seward Meridian. The location is accurate within 0.1 mile for the center of the prospect area. The prospect is number 14 of Detterman and Cobb (1972) and number 12 of Reed (1967). |
| Geologic setting of the deposit | |

**Geologic description**

The Fog Lake prospect is mainly in volcanic rocks exposed in the canyon of locally-named Fog Creek, a southeast tributary of Fog Lake.

The volcanic rocks and subordinate interbedded sedimentary rocks unconformably overlie Jurassic plutonic rocks at shallow depth (Retherford and Klemmick, 1999). From their base up, the strata are: (1) plutonic- cobble conglomerate of probable early Tertiary age; (2) green polymict conglomerate of probable early Tertiary age that possibly correlates with the upper conglomerate member of the Copper Lake Formation (Detterman and Reed, 1980); (3) dacite/dacite breccia of probable late Eocene to early Oligocene age; (4) dacite/quartz porphyry breccia similar in age to unit 3; (5) lahar flow breccia; (6) quartz-porphyry tuff breccia of probable late Eocene to early Oligocene age; (7) rhyodacite crystal tuff; and (8) argillized dacite. The volcanic rocks are cut by dacite dikes 2 to 20 feet in width (Retherford and Klemmick, 1999). Depending on their original composition, the volcanic rocks are widely propylitized and locally sericitized, silicified, and argillized. The dacite/dacite breccia of unit 3 may be coeval with intrusive rocks exposed about 6 miles east of Fog Lake that have been dated at about 36 Ma (Detterman and Reed, 1980). The Fog Lake deposit apparently is aligned northwesterly, subparallel to a fault along Fog Creek nearly coincident with the axis of a syncline. The deposit locally may extend east to northeast along cross faults or dacite dikes.

The Fog Lake deposit consists of gold- and sulfide-bearing quartz-calcite veins and sulfide disseminations (Butherus and others, 1981; Moller and others, 1982; Freeman and Farnham, 1983; Retherford and Klemmick, 1999). Pyrite and chalcopyrite are disseminated in all of the volcanic rocks but are most abundant in units 1 through 5. Swarms of sulfide veinlets up to an inch or so thick occur in northeast, northwest, and east-west fracture sets. Maximum vein density is about 8 per foot. Sulfides, mainly pyrite and chalcopyrite, along with subordinate olive-colored sphalerite, form small masses in quartz-calcite gangue. Azurite and malachite occur locally in gossan. Gold appears to correlate with sulfide content, and probably is free milling; it can be panned along about 2,200 feet of Fog Creek. Rock samples locally contain more than 1 ounce of gold per ton (Reed, 1967; Retherford and Klemmick, 1999). The deposit has been explored by shallow trenches. The maximum gold content in various samples from the trenches was 1.5 parts per million, and the maximum copper content was 11 percent (Freeman and

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| | Farnham, 1983). A gold-in-soil anomaly along Fog Creek is about one-half mile long and 700 feet wide. An exceptional soil sample contained 18.8 parts per million gold. Gold in soil correlates moderately well with copper and zinc.<br><br>As of 2008, Andover Ventures is exploring the deposit under an agreement with the Bristol Bay Native Corporation (Andover Ventures, 2006, Fog Lake; 2007, Progress Report). They have yet to drill the property but they have provided a map of the areas of interest and indicate several zones where numerous samples are anomalous in gold, copper, silver, and zinc (Andover Venures, 2008, Map of Fog Lake). |
| **Geologic map unit** | (geologic unit) |
| **Mineral deposit model** | Epithermal gold-copper deposit, possibly grading downward into porphyry copper-gold deposit (Cox and Singer, 1986; models 25b and 20c). |
| **Mineral deposit model number** | 25b, 20c? |
| **Age of mineralization** | Possibly about 36 Ma, the age of intrusive rocks about six miles east of Fog Lake. |
| **Alteration of deposit** | Extensive propylitic alteration in the darker volcanic rocks; local argillic, sericitic, and silicic alteration. Oxidation of iron and copper minerals. |
| Production and reserves | |
| **Workings or exploration** | The deposit was discovered in 1967 by B. L. Reed of the U.S. Geological Survey. Reed collected samples that contained anomalous copper and silver and as much as 37.7 parts per million gold (Reed, 1967). The prospect was subsequently staked by St. Eugene Mining Company, but abandoned without significant work. It was explored by Resource Associates of Alaska (RAA) for several years (Butherus and others, 1981; Moller and others, 1982; Freeman and Farnham, 1983). Soil samples were collected on a grid totaling more than 24,000 lineal feet (Butherus and others, 1981). Soil sampling was followed by detailed geologic mapping along Fog Creek, by trenching, and by magnetic and VLF surveys (Moller and others, 1982).<br><br>As of 2008, Andover Ventures is exploring the deposit under an agreement with the Bristol Bay Native Corporation (Andover Ventures, 2006, Fog Lake; 2007, Progress Report). They have yet to drill the property but they have provided a map of the areas of interest and indicate several zones where numerous |

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| | samples are anomalous in gold, copper, silver, and zinc (Andover Venures, 2008, Map of Fog Lake). |
| **Indication of production** | None |
| **Reserve estimates** | None. |

References in other databases and published literature

| | |
|---|---|
| **MRDS Number** | A013044 |
| **Primary reference** | Moller and others, 1982; Retherford and Klemmick, 1999 |
| **References** | • Andover Ventures 2006 (Fog Lake), Fog Lake: http://www.andoverventures.com/projects/joint_ventured/fo (August 23, 2007).<br>• Andover Ventures, 2007 (Progress Report), Andover provides progress report on 2007 field work/drill programs: http://www.andoverventures.com/news/2007/index.php?&c (September 10, 2007).<br>• Andover Ventures, 2008, (Map of Fog Lake area): http://www.andoverventures.com/_resources/project/foglake (as of March 4, 2008).<br>• Butherus, D. L, White, D. C., Smith, W. H., Radford, Geoff, Sandberg, R. J., and Pray, J. C., 1981, Exploration and evaluation of precious metals potential of Bristol Bay Native Corporation lands, southwest Alaska, v. 1: Resource Associates of Alaska, Fairbanks, Alaska. (Report on file, Bristol Bay Native Corporation, Anchorage, Alaska).<br>• Detterman, R.L., and Cobb, E.H., 1972, Metallic mineral resources map of the Iliamna quadrangle, Alaska: U.S. Geological Survey Miscellaneous Field Studies Map MF-364, 1 sheet, scale 1:250,000.<br>• Detterman, R.L., and Reed, B.L., 1980, Stratigraphy, structure, and economic geology of the Iliamna quadrangle, Alaska: U.S. Geological Survey Bulletin 1368-B, 86 p.<br>• Freeman, C. L., and Farnham, Susan, 1983, Bristol Bay Native Corporation [1983] Native Corporation lands, Final report: Resource Associates of Alaska, Fairbanks, Alaska (Report on file, Bristol Bay Native Corporation, Anchorage, Alaska).<br>• Moller, S. A., Bernt, J., Farnstrom, H. E., Toupe, W., Hanneman, Nancy, 1982, Exploration and evaluation of precious metals potential of Bristol Bay Native Corporation lands, SW Alaska, vols. IV and V: Resource Associates of Alaska, Fairbanks, Alaska. (Report on file, |

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- Reed, B.L., 1967, Results of stream sediment sampling and bedrock analyses in the eastern part of the Iliamna quadrangle, and at Kasna Creek, Lake Clark quadrangle, Alaska: U.S. Geological Survey Open-File Report 272, 18 p.
- Retherford, R. M., and Klemmick, George, 1999, The Fog Lake property. A sumary: Alaska Earth Sciences, Anchorage, Alaska. (Report on file, Bristol Bay Native Corporation, Anchorage, Alaska).

Database entry and update information

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| **Reporters** | C.C. Hawley (Hawley Resource Group, Anchorage, Alaska); D.J. Grybeck (Port Ludlow, WA) |
| **Last report date** | 3/4/2008 |

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